

AMENDMENTS TO THE CLAIMS:

Complete Listing of Claims

Claim 1. (currently amended) A method for initiating a contention-free burst by a hybrid coordinator of a network of stations capable of communicating directly to other stations in the network using a shared communications medium comprising:

determining whether ~~a status~~ of the shared communications medium is busy or idle;

if the shared communications medium is idle, determining whether the medium has been idle for a first predetermined time period, and:

if so, transmitting information immediately, and

if not, waiting until the medium has been idle for the first predetermined time period, and then transmitting information; and

if the shared communications medium is busy, determining whether the shared communications medium is busy due to a transmission from a station within the network, and:

if so, transmitting information after a second predetermined time period after the shared communications medium becomes idle, and

if not, transmitting information after a third predetermined time period after the shared communications medium becomes idle

~~waiting for access to the shared communications medium based on the status of the shared communications medium; and~~

~~transmitting information after expiration of a specified period of time.~~

Claim 2. (currently amended) The method of claim 1, wherein the first predetermined time period is the status of the shared communications medium is idle, and ~~wherein the waiting step comprises ensuring that the shared communications medium has been idle for at least a point coordination function inter-frame space (PIFS) period.~~

Claim 3. (canceled)

Claim 4. (currently amended) The method of claim 1 3, wherein the second predetermined time period is source of the transmission was determined to have originated from a same BSS, and ~~wherein the specified period of time is equal to a short inter-frame space (SIFS) period.~~

Claim 5. (currently amended) The method of claim 1 3, wherein the third predetermined time period is source of the transmission was determined to have originated from a same BSS, and ~~wherein the specified period of time is equal to a point coordination function inter-frame space (PIFS) period.~~

Claim 6. (currently amended) The method of claim 1, wherein the contention-free burst is of limited duration and the hybrid coordinator has more information to transmit than can be transmitted in the contention-free burst, the method further comprises:

- (1) waiting a fourth predetermined ~~second specified~~ time period after the completion of the contention-free burst;
- (2) generating a backoff time;
- (3) initiating a backoff procedure; and
- (4) initiating a new contention-free burst when the backoff procedure completes.

Claim 7. (currently amended) The method of claim 6, wherein the fourth ~~second~~ specified time period is a point coordination function inter-frame space (PIFS) period.

Claim 8. (currently amended) The method of claim 6, wherein the step of initiating a backoff procedure ~~step~~ comprises:

- inserting the backoff time into a backoff timer;
- decrementing the backoff timer each time an idle slot expires; and
- completing the backoff procedure when the backoff counter reaches zero.

Claim 9. (original) The method of claim 6, wherein the method is repeated until the hybrid coordinator transmits all of its information.

Claim 10. (original) The method of claim 6, wherein a second hybrid coordinator may take control of the shared medium by initiating a contention-free burst of its own while the hybrid coordinator is attempting to initiate a new contention-free burst.

Claim 11. (original) The method of claim 10, wherein the second hybrid coordinator may initiate the contention-free burst after the shared medium has been idle for a PIFS period.

Claim 12. (original) The method of claim 6, wherein the backoff time is randomly chosen from a contention window of $[0, CWHC)$ where $CWHC = CWHC_{min} + 1$, and $CWHC_{min}$ is a prespecified value.

Claim 13. (original) The method of claim 12, wherein a collision occurs due to the initiating of the new contention-free burst, and wherein the method comprises an additional step of (5) repeating steps (1)-(4) with the backoff time being randomly chosen from a contention window of $[0, 2 \cdot CWHC)$.

Claim 14. (original) The method of claim 13, wherein the contention window is doubled each time the method repeats due to a collision resulting from the initiating of the new contention-free burst.

Claim 15. (original) The method of claim 14, wherein the contention window has a maximum size of $[0, CWHC_{max} + 1)$ where $CWHC_{max}$ is a prespecified value.

Claim 16. (original) The method of claim 15, wherein a default value of $CWHC_{max}$ is equal to $CWHC_{min}$ and $CWHC_{min}$ is defaulted to three time slots.

Claim 17. (currently amended) A method for access recovery in a shared medium comprising:

transmitting a first frame to a first station destination to initiate a contention-free burst ~~contention-burst~~;

waiting for an expected response from the first station destination within a first predetermined time period; and

if the expected response from the first station destination does not arrive within the first predetermined ~~specified~~ time period, then:

sensing a status of the shared medium,; and

if the shared medium is idle, then waiting a second predetermined time period after the frame is transmitted,; and then regaining control of the shared medium, and

if the shared medium is not idle after the first predetermined time period after the frame is transmitted, then waiting a third predetermined time period after the frame is transmitted, and then regaining control of the shared medium.

Claim 18. (currently amended) The method of claim 17, wherein the first predetermined period of time is a point coordinator function inter-frame space (PIFS) period.

Claim 19. (currently amended) The method of claim 17, wherein the second predetermined time period is equal to a point coordinator function inter-frame space (PIFS) ~~third time period~~ plus a backoff time.

Claim 20. (currently amended) The method of claim 17, wherein the third predetermined time period is a transmission opportunity (TXOP) period plus a backoff time

~~a wireless station is in control of the shared medium, and wherein the status of the shared medium is idle, and wherein the specified time period is equal to one short inter-frame space (SIFS) period.~~

Claim 21. (currently amended) The method of claim 20, wherein the wireless station will regain control of the shared medium by transmitting a second frame one time slot after short inter-frame space (SIFS) ~~waiting the first specified period of time~~ after the end of the first transmission, only if sufficient time remains in a transmission opportunity granted to the first ~~wireless~~ station to transmit the second frame plus receive an acknowledgment corresponding to the second frame.

Claim 22. (currently amended) The method of claim 17 ~~20~~, wherein a hybrid coordinator may regain control of the shared medium one PIFS period after a transmission opportunity granted to the first ~~wireless~~ station expires.

Claim 23. (currently amended) The method of claim 17, wherein a hybrid coordinator is in control of the shared medium, and wherein the status of the shared medium is idle, and wherein the step of waiting a second predetermined time period ~~step~~ comprises initiating a random backoff procedure.

Claim 24. (original) The method of claim 23, wherein the initiating step comprises:

- generating a backoff period;
- loading a backoff counter with the backoff period;
- decrementing the backoff counter each time an idle slot expires; and
- completing the backoff procedure when the backoff counter reaches zero.

Claim 25. (original) The method of claim 24, wherein the backoff period is a value randomly selected from a contention window.

Claim 26. (original) The method of claim 25, wherein the contention window is of size $[0, CWHC)$, wherein 0 is included and CWHC is excluded, wherein CWHC is equal to CWHCmin plus one, and wherein CWHCmin is a prespecified value.

Claim 27. (original) The method of claim 26, wherein the contention window doubles in size each time another backoff period is selected following a failed access recovery.

Claim 28. (original) The method of claim 27, wherein a maximum contention window size is fixed at $[0, CWHC_{max} + 1)$, wherein $CWHC_{max}$ is a prespecified value.

Claim 29. (original) The method of claim 28, wherein a default value of $CWHC_{max}$ is equal to $CWHC_{min}$, and wherein a default value of $CWHC_{min}$ is equal to three time slots.

Claim 30. (original) The method of claim 17, wherein a hybrid controller is in control of the shared medium, and the status of the shared medium is busy, and wherein the waiting a second time period step comprises:

 waiting a period of time, wherein the period of time is equal to a sum of a point coordinator function inter-frame space (PIFS) period plus the larger of a time while the shared medium is busy or a transmission opportunity specified in the frame; and

 initiating a backoff procedure.

Claim 31. (original) The method of claim 30, wherein the initiating step comprises:

- generating a backoff period;
- loading a backoff counter with the backoff period;
- decrementing the backoff counter each time an idle slot expires; and
- completing the backoff procedure when the backoff counter reaches zero.

Claim 32. (currently amended) The method of claim 17, wherein the regaining step comprises transmitting a second frame to a second ~~destination~~ station initiating a new contention free burst.

Claim 33. (currently amended) The method of claim 32, wherein the second ~~destination~~ station is the same as the first destination station.

Claim 34. (currently amended) The method of claim 32, wherein the second ~~destination~~ station is different from the first destination station.

Claims 35-41 (canceled)